

GWSkySim: a fast simulator of gravitational wave sources with multimessenger applications

Thursday, September 29, 2022 11:30 AM (20 minutes)

The observation of the GW170817 event has shown how multimessenger astronomy is a powerful tool to investigate the most energetic phenomena in the Universe. Simulations are an important tool to study multimessenger emission and understand the constraints that can be put using joined electromagnetic and gravitational-wave observations. For that purpose, we developed the Gravitational Wave Sky Simulator (*gwsksim*), a numerically efficient and user-friendly software for simulating realistic gravitational emission from astrophysical sources and their electromagnetic counterparts. The output produced by the simulator can be read and manipulated with the most important analysis tools used in the field. We will give an overview of the software package and present some examples of possible applications.

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Session Classification: Session 7